ABSTRACT

VALIDATION AND DETERMINATION OF CHONDROITIN SULPHATE IN SAMBAR'S DEER ANTLER EXTRACT BY TLC-DENSITOMETRY

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This study purposed to obtain a valid thin layer chromatography-densitometry for identification and determination of chondroitin sulphate in Sambar's deer antler extract. The selective separation of chondroitin sulphate from nearest peak (Rs = 1.8) was obtained using 2-propanol : water (80 : 20) containing NaCl at a final concentration of 0.05 M as mobile phase and a mixture of diphenylamine, phosphoric acid, aniline (DPA) as visualization reagents. The identification of chondroitin sulphate based on similarity of the Rf and spectra between standard and sample. The linear relationship between chondroitin sulphate concentration and area in the concentration range of 0.4 µg - 4 µg was y = 1000.9x-262.5; r = 0.9974. The accuracy showed that the average percentage of chondroitin sulphate recovery of Sambar's antler was 56.63%; whilst the precision was ranging from 4.18% to 6.87%. The detection limit of chondroitin sulphate was 0.35 µg and quantification limit of chondroitin sulphate was 1.18 µg. The selectivity, linierity and precision of the proposed method were fulfilled the requirement but the accuracy of the method was in the range of 45.70% to 66.44%. This method obtained the chondroitin sulphate content in water maseration, ethanol maseration, and ethanol percolation samples were 0.21%, 1.32%, and 0.54% respectively.

Keywords: Chondroitin sulphate, thin layer chromatography-densitometry, Sambar Deer Antler, *Cervus unicolor*.